

Volume 2, Issue 2

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**June 2017** 

# **CNTAware**

### A WORD FROM OUR EXECUTIVE DIRECTOR

The end of the school year brings lots of excitement including the opportunity to acknowledge students' achievements. Thanks to the generosity of our members and sponsors, CNTA provides scholarships to deserving high school students through our annual essay contest at this time of year. This year CNTA also conducted a video contest to "debunk" nuclear myths and, thanks to a generous sponsor, the winning entry received a GoPro (with accessories) for their school. The submissions for this year's essay contest were outstanding and four winners were selected for their essays on topics ranging from difficulties associated with shortages of medical isotopes to challenges in dealing with nuclear waste to looming energy issues associated with nuclear plant closings. The essay contest winners were:

Jared DeMass Aiken HS

Maxwell DiPrete Greenbrier HS

Justin McCorkle Greenbrier HS

Steven Poore Silver Bluff HS







A team from the Richmond County Technical Careers Magnet School won the video contest for their entry "The Nuclear Truth." I would like to thank Marissa Reigel for chairing the contests and all the volunteers for evaluating the entries. Marissa and I had the pleasure of attending the school award ceremonies to present the scholarships and the GoPro.

The achievements of students in our area high schools are amazing!





The end of the school year also provides time for teachers to refresh and participate in continuing education activities. The Southeast Summer Nuclear Institute (SSNI) organized and conducted by CNTA is an intensive three day workshop consisting of lectures, demonstrations and site tours. I participated in my first SSNI workshop this year and was thoroughly impressed by the quality of the presentations and tours. The meals provided to the attendees were delicious too! Mel Buckner and his team are to be commended for their dedication and hard work. I would like to express my sincere thanks to all the presenters, site visit organizers, meal organizers, drivers, registration support and all those that worked behind the scenes. This year's participants traveled from as far away as Atlanta and Greenville and the workshop received overwhelmingly positive reviews. The Augusta Chronicle published an article on SSNI and a quote from one of the student's sums up the value of the course - "Everything in the program was great and it was really informative. I learned a lot of good, new ways to present information to the students."

I hope that the rest of your summer is enjoyable. I look forward to a busy fall including our annual Teller Lecture and all the events associated with Nuclear Science Week.

Jim

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### LETTER OF THANKS TO CNTA

Dear CNTA:

By now you may have heard the good news that SC State radiochemistry graduate and USNRC employee **Miss Kara McCullough** was crowned **Miss USA 2017** in May. The Orangeburg newspaper recently did an article on Miss McCullough:

http://thetandd.com/features/miss-usa-nurturing-community-at-scsu-had-role-in-her/article\_ee90a25c-5146-56b3-964ad6bc17239308.html?utm\_medium=social&utm\_source=email&utm\_campaign=user-share

Kara McCullough '13, was the 11th graduate of the Radiochemistry program and the seventh SC State student hired by the U.S. Nuclear Regulatory Commission. As a sophomore, she was a co-author of a paper published in the prestigious professional journal *Health Physics* with **CNTA Davisson Award** winner **Dr. Zheng Cheng**.

Other news that you may not be aware of is that as of this writing, there are four Black American graduate students in the nuclear engineering program at the University of Michigan; three of these are SC State students, and of those three, two are former **CNTA Maher Scholar** awardees **Valerie Nwadeyi** and **Samuel Cole**. They are doing well at this premier institution.

Over my 8 year tenure at SC State, participation at the CNTA Edward Teller Lecture series has played a major role in exposing SC State nuclear science and engineering students to key industrial players in the nuclear enterprise. Some had never experienced such a formal professional event before.

The results has been encouragement to succeed and excel, expanded opportunities for internships, employment, and educational opportunities. In fact, on several occasions, CNTA member industries have paid for SC State student participation in the lecture series. We are now seeing the fruits of all of this.

It is my sincere hope that CNTA continues its programs of outreach at all levels and its programs of recognition; these are effective and encouraging indeed.

Best Regards, Kenneth D. Lewis, Ph.D., P.E. Fellow, ANS Former Dean of STEM, SC State University

> Kara McCullough, 25, has worked for nearly four years as an emergency preparedness specialist in the U.S. Nuclear Regulatory Commission's Office of Nuclear Security and Incident Response in Washington, D.C. (Photo courtesy of the U.S. Nuclear Regulatory Commission's Office.)



### CNTAware

### **UP & ATOM BREAKFAST & DINNER SPEAKERS**



April 20, 2017 Scott Kirk BWXT Director of Regulatory Affairs "Nuclear Processing Excellence —Fire Power to Electric Power"



May 24, 2017 Dr. Tom Burns PARSONS

Senior Vice President Deputy Project Manager Director of Engineering

"Salt Waste Processing Facility (SWPF)



May 31, 2017 **Matt Blackwell** Legislative Assistant U.S. Congressman Joe Wilson 2nd District of South Carolina "DC Politics and the Nuclear Industry"



June 29, 2017 Jim Blankenhorn AECOM Vice President, Operations, Nuclear & Environment

"WIPP Recovery and Status"

## MINI-CAMP ENCOURAGES GIRLS TO PURSUE CAREERS IN SCIENCE, ENGINEERING AND TECHNOLOGY

Girl Scouts of South Carolina – Mountains to Midlands recently teamed up with Savannah River Nuclear Solutions (SRNS) to offer a camp for high school girls interested in careers involving science, technology, engineering and math (STEM), called Girls Get SET.

"We are very grateful to Savannah River Nuclear Solutions and one of its parent companies, Honeywell, for providing the funding for this camp, with their support we are able to offer a quality program at a very affordable rate," said Patti Bennett, programs coordinator for the Aiken Girl Scout Service Unit. "The program is a win-win-win situation; the girls get an amazing camp experience, USC Aiken (USCA) can showcase their award-winning campus and SRNS develops potential candidates for a future workforce."

The event consists of a three-day, two-night residential camp that offers participants the opportunity to experience life in a college dorm, engage in hands-on engineering and nuclear science programs and participate in a career exploration forum.

This is the second year the camp has been offered and a new component was added for rising 11th- and 12th-graders in which they make their own game board by soldering together an electrical circuit, similar to the game Operation.

"It's really cool how they have us think outside of the box," said Noria Williamson, a rising freshman at Silver Bluff High School. "It's so visual and a great way to learn using hands-on projects. I would definitely recommend this camp to my friends."

Williamson explained that her occupational goal is to become a mechanical engineer. "Learning about this approach to collaborative and innovative thinking is challenging, but it can help me in school and to get the job I want."

Rising ninth- and 10th-graders again completed the "Engineers to the Rescue" program where they design and create different items to help them survive a staged scenario of an earthquake during a campout.

Bennett explained that the mini-camp is called Girls Get SET, where SET stands for science, engineering and technology. "We also want to help them 'get set' for college, careers and life," added Bennett.

"When I was in school, our counselors emphasized teaching, nursing and other careers typically associated with females," said Bennett. "The primary goal of this camp is to inspire girls to consider careers in nontraditional fields and to give them a basic introduction to a few of those career options."

All the campers also completed the Girl Scouts Get to Know Nuclear patch program, developed by the American Nuclear Society.

The donation from Savannah River Nuclear Solutions covers the costs of housing, meals, supplies and a stipend for camp counselors.



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## 15<sup>th</sup> Annual CNTA Golf Tournament Raises Money for Organization

Citizens for Nuclear Technology Awareness (CNTA) recently held its 15<sup>th</sup> annual golf tournament at Houndslake Country Club in Aiken, South Carolina. Thirty-two teams—128 golfers—played in the Captain's Choice-style tournament. Jim Marra, CNTA Executive Director, said the tournament was a success.

"It was a beautiful day on the course for not only fundraising, but for fellowship as well," Marra said. "It was especially entertaining this year with the 'Beat the Executive Director' contest. Players donated \$5 for a closest-to-the-pin contest against me. That was a new and fun way to raise some extra money for the organization."

The winners of the tournament were:

- First Place Net: Team Arkin: Rick Arkin, Rich Viviano, Brent Boore, John Caravello
- Second Place Net: Team CB&I AREVA MOX Services 1: Mike Zustra, Rod Whitley, Kirk Saunders, Ray Keeler
- Third Place Net: Team Matthews: Don Blake, Shayne Farrell, Ron Matthews, Kevin Buchanan
- Low Gross: Team Guevara: Karen Guevara, Fred Dohse, Justin Pitt, Justin Wheelon
- Closest to the Flag Dogwood 3: Nyle Elmquist—Team SRNS 1
- Closest to the Flag Azalea 4: Mike Coleman—Team SRSCRO
- Closet to the Flag Azalea 8: Craig Gosney—Team McGuire
- Ladies Straightest Drive Azalea 9: Dianne Russotto-Team CNTA

The tournament heritage sponsor was BWX Technologies.

Other sponsors for the tournament were:

- Lunch Sponsor: Savannah River Nuclear Solutions
- Beverage Sponsors: Parsons and Stoller Newport News Nuclear
- Prize Sponsor: CB&I AREVA MOX Services, Inc.

Players also participated in drawings to win prizes such as gift certificates, free dinner, golf items, etc. Three winning tickets were drawn with each receiving one of the following prizes: a filled Yeti® cooler, a four-day stay at an Edisto condominium, and a necklace from Floyd & Green Jewelers. (Additional photos can be found on the CNTA website, www.c-n-t-a.com.)



TEAM ARKIN



CB&I AREVA MOX SERVICES 1



TEAM MATTHEWS



TEAM GUEVARA







### MOX RAISES MONEY FOR CHILDREN'S PLACE

Fresh-off-the-grill barbecue, a golf tournament, a motorcycle ride, a fishing tournament and a full-course dinner. All of this sounds like the schedule of a celebrity, but were actually events that required countless volunteer hours that raised more than \$42,000 for the children at Children's Place.

Children's Place, a local social services nonprofit, serves the Aiken community by providing therapeutic child care and teaching social skills to more than 110 special-needs children daily, offering coaching and parenting classes and providing community wide training to stop sexual abuse of children.

The MOX team echoed these services by adding a "for five" theme to their events, reminding team members of the five reasons why they should raise money for Children's Place.

Peggy Ford, executive director of Children's Place, said, "The commitment of MOX employees to help kids in our community is amazing. I am awed, honored and humbled by the MOX team's efforts on our behalf."

CB&I AREVA MOX Services team members coordinated several events, including: Ride For Five - An 85-mile motorcycle ride led by President and CEO David Del Vecchio; Fishing For Five - a fishing tournament held at Lake Thurmond; a golf tournament at Woodside Plantation and Celebrity Waiter Night at the Woodside Reserve Club.

Team members also held fundraisers at the MOX Project, where they volunteered time to raise money through bake sales, snacks and a large onsite barbecue with more than 400 plates provided to employees.

2017 marked the 7th year that CB&I AREVA MOX Services and its team members have been the top fundraiser for Children's Place while setting a record for monetary giving for the company.





## SREL RADIOLOGICAL EDUCATION, MONITORING and OUTREACH PROJECT

#### Submitted by Megan Winzeler

The University of Georgia's Savannah River Ecology Laboratory (UGA SREL) Radiological Education, Monitoring, and Outreach Project (REMOP) was established to educate the citizens of Burke County, GA, particularly in the Shell Bluff area along the Savannah River, and to provide new monitoring data of existing radionuclide and heavy metal contaminants. During 2017, in collaboration with Georgia Women's Actions for New Directions (WAND), the project will begin monthly Community Talks on topics such as contaminants, radiation, environmental monitoring programs, policy development, and environmental risk assessment. Additional special topics on job creation, healthy living, and emergency preparedness will also be included in the project in collaboration with GA WAND and UGA Burke County Extension.

A survey will be given to citizens attending early REMOP presentations in order to gather information about current understandings of science and industry in the area, consumption rates of game or domestically grown meat, and backyard gardens. These surveys will also allow individuals to provide information about their desire to be considered for a potential sampling in 2018 of their soil, water, vegetables, or domestic animals. This allows us to gather a balanced set of sampling locations to ensure that one particular type of sample is not grouped into a specific geographic area while engaging with the community for the data collection process.

REMOP Community Talks will begin on July 24th at the Burke County Library with an introduction to the project and the scientific method. The second year education plan will build upon the first year's topics by including UGA SREL's data from the 2018 data collection with a comparison to historical data from the area. In the next 6 months, REMOP will begin giving regular presentations in Burke County, begin sampling within the community, and continue forming relationships with the citizens to create a stronger outreach program.

### **UGA'S SREL** ANNOUNCES ITS 2017 UNDERGRADUATE COHORT

#### Submitted Article

This group of 14 will gain advanced field and lab experience on the U.S. Department of Energy's Savannah River Site investigated the transport, fate, and effects of radioactive elements. Their 10-week summer experience began with intense training in protocols and safe handling of radioactive elements. The 2017 cohort represents 11 institutions of higher learning from across the country.

#### Below:

SREL's 2017 undergraduates from left to right, front row are Jessica Gray, Elizabeth DiBona, Demetrius Calloway, Caleigh Quick, Manette Tanelus, Mariela Muniz-Gonzalez; (left to right, back row), Collin Topolski, Kaitlin Wilms, Jacob Jakielaszek, Kip Callahan, Eric Tokuyama, Robert Lewis, Michael Christianson, and Melissa Lech.





Savannah River Ecology Laboratory UNIVERSITY OF GEORGIA Submitted Article

At the end of the Cold War, leaders around the world were concerned that weapons-grade fissile materials that were present in countries that had previously belonged to the former Soviet Union could fall into the wrong hands. Beginning in the 1990s, the U.S. Department of Energy's National Nuclear Security Administration (DOE/NNSA) evaluated the potential uses of highly enriched uranium (HEU) that had been declared surplus. The surplus HEU could be purified and downblended into Low-Enriched Uranium (LEU) for use as nuclear fuel in commercial nuclear reactors or disposed of as radioactive waste in either a low-level waste disposal facility or geologic repository.

BWXT operates the only commercial Category 1 facilities for handling Strategic Special Nuclear Materials in the U.S. These facilities, located in Lynchburg, VA and at Nuclear Fuel Services (NFS) in Erwin, TN, are licensed by the Nuclear Regulatory Commission.

In 1995, BWXT purified and downblended 500 kilograms of HEU in a campaign named "Project Sapphire." The HEU had been characterized and removed from Kazakhstan, from the former Soviet Union, and was downblended into 20 Metric Tons (MT) LEU at BWXT's facilities in Lynchburg, VA.

In the late 1990s, BWXT significantly expanded manufacturing operations in Lynchburg, VA, to downblend 47 MT of HEU, as part of the "Swords to Ploughshares Project," provided by the United States Enrichment Corporation (USEC). This expansion included process design, pilot-scale research and development as well as installation of production scale systems for direct dissolution of HEU metal and oxides with enrichments ranging from 20 to 90 wt % 235U.

In 1999, DOE/NNSA entered into an Interagency Agreement with the Tennessee Valley Authority (TVA) to downblend HEU into LEU fuel assemblies to generate electricity at the Browns Ferry Nuclear Power Plant near Athens, AL. Under the Interagency Agreement, DOE/NNSA would provide HEU for downblending and purification into LEU at either NFS or at H-Canyon at the Savannah River Site (SRS). The HEU contained elevated levels of 234U and 236U, and originally named the "Off-Specification HEU Project" and later the "Blended Low-Enriched Uranium Project" or "BLEU Project." The LEU would be manufactured into nuclear fuel at a commercial fuel fabrication facility operated by AREVA in Richland, WA. To date, the BLEU Project has saved taxpayers approximately \$500 million when compared to the cost of direct disposal of the HEU. Additionally, TVA rate-payers saved significant money when compared to purchasing conventional nuclear reactor fuel.

The DOE/NNSA also established the "American Assured Fuel Supply Project" designed to ensure that LEU fuel would be available to countries without the need to develop their own enrichment technology. Pursuant to this project, HEU of both domestic and international origins are downblended at NFS or SRS H-Canyon into low-enriched uranyl nitrate solutions and stockpiled by NNSA for commercial nuclear fuel.

BWXT has also been actively engaged with the DOE in recycling Uranium Hexafluoride (UF6) (~0.7 wt.% 235U) stockpiled at the Portsmouth Gaseous Diffusion Plant near Piketon, OH. The proceeds from these uranium barter transfers have been used to fund the decommissioning operations at Portsmouth.

BWXT's innovative uranium recycling initiatives have been successful in solving significant domestic and international nuclear non-proliferations challenges. Since 1995, BWXT has downblended over 150 MT of HEU into 1,870 MT of LEU to generate clean electricity in the nuclear power plants operated by TVA at significant cost savings to the taxpayers in the U.S. In addition, over \$1 billion in proceeds have been generated by DOE to fund the decommissioning operations at Portsmouth through the uranium barter transfer program.

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### SALT WASTE FACILITY STARTUP STAYS ON TRACK AT SAVANNAH RIVER SITE

AIKEN STANDARD STAFF REPORT: APR 28, 2017

A year after construction was completed, the Salt Waste Processing Facility at the Savannah River Site in Aiken County is still scheduled to begin operations in December 2018, according to a news release.

The Salt Waste Processing Facility, or SWPF, was built to treat radioactive salt solutions presently stored in underground tanks at SRS.

Parsons is the contractor that built the facility. Construction began in 2009 and construction was declared complete in April 2016.

SWPF will process the majority of the SRS salt waste inventory by treating highly radioactive salt solutions stored in underground tanks. It's capable of handling 10 times the amount of liquid waste that's currently processed, U.S. Department of Energy officials have said.

Removing salt waste is a major step toward emptying and closing the site's remaining 43 high-level waste tanks, as that waste takes up more than 90 percent of their space, the news release said.

As SWPF testing continued last month, concerns about temperature trends for the motors of the facility's exhaust fans prompted engineers with SWPF contractor Parsons to request troubleshooting to ensure adequate performance, according to the release.

"We needed a motor evaluated quickly, and while we had several offsite vendors who could do the work, getting them qualified to meet the standards of this kind of nuclear facility would have added several weeks at a minimum," said Frank Sheppard, SWPF project manager.

SWPF Maintenance and Work Control Manager Mike Ward, an employee at SRS for more than two decades, suggested Parsons ask the onsite motor shop to help.

Ultimately, SRNS teamed with Parsons and EM to develop a work scope, troubleshoot the motors and perform maintenance testing with parts supplied by Parsons. The motors were returned to SWPF in 10 days, and the work cost about \$7,000, the release said.

"This is a big part of our job – providing important services to help all the contractors and projects at the Savannah River Site succeed in supporting these important Department of Energy missions," SRNS President Stuart MacVean said. "In this case, our team was able to provide their expertise to Parsons and get the motor maintenance performed and back to SWPF in a few days at a fraction of what it would cost at an offsite vendor."

In another partnership, the Savannah River National Lab, which is managed by SRNS, trained Parsons staff for the SWPF analytical laboratory.

"We needed to have somewhere we could use radioactive material in training our staff and developing our methods," SWPF Operations Manager John Pearson said. "SRNL has been a great resource, not only providing the lab space but training our staff so that we don't have to learn things the hard way. We'd much rather learn from their experience."

Since August, seven Parsons workers have completed SRNL training. They are now certified to work independently and were able to prove their methods in a lab environment to show they can get the consistent results necessary once the SWPF lab is in operation.



Terry Weaver works at SRNS breaker and motor shop at the SRS.

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### **FUTURE CNTA EVENTS**

#### **UP & ATOM BREAKFASTS**

JULY 26, 2017 Tom Foster SRR President and Project Manager SRR Interns "The Future is Now"

#### **CNTA YOUNG PROFESSIONALS COSTUME BALL**

OCTOBER 13, 2017 Aiken Center for the Arts (open to all ages)

### **EDWARD TELLER LECTURE**

October 19, 2017

Guest Speaker: Jim Conca

Dr. James Conca is the Senior Scientist at UFA Ventures, Inc. in the Tri-Cities, Washington, and a Trustee of the Herbert M. Parker Foundation. Prior to this, Conca was Director of the Center for Laboratory Sciences at Columbia Basin College and Director of the WSCF labs at the Hanford Site. From 2004 to 2010, he was Director of the NMSU Environmental Monitoring and Research Center in Carlsbad, NM, the independent monitoring program for the world's only operating deep geologic nuclear waste repository, the WIPP. Jim was a Section Leader at Los Alamos National Laboratory from 1999 to 2004 and, before that, a faculty member at Washington State University in Tri-Cities and a staff scientist at PNNL. He obtained a Ph.D. in Geochemistry from the California Institute of Technology in 1985, a Masters in Planetary Science from CalTech in 1981, and a BS in Geology and Biochemistry from Brown University in 1979. Conca is also a Science Contributor to Forbes on energy and nuclear issues at http://www.forbes.com/sites/jamesconca/, and has authored over a hundred journal articles, books, and chapters on a wide range of nuclear, waste, remediation and energy issues.

#### **NUCLEAR SCIENCE WEEK**

October 16—20, 2017 Activities at Various Locations

## **2017 Corporate Members**

### **PLATINUM**

CB&I AREVA MOX Services, LLC Savannah River Nuclear Solutions Savannah River Remediation

#### <u>Gold</u>

Arthur Rich Centerra-SRS Fluor Government Group Parsons Stoller Newport News Nuclear (SN3)

### **BRONZE**

Atkins Bechtel BWX Technologies, Inc. (BWXT) SCUREF Private Foundation

### **BUSINESS**

Applied Research Center (ARC) CH2M Economic Development Partnership (EDP) North Wind Group Security Federal Bank SRS Community Reuse Organization

### CNTAware

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### **2017 SSNI SPONSORS**



## 2017 UP & ATOM BREAKFAST & DINNER SPONSORS (to date)

January 11, 2017-Stuart MacVean

March 1, 2017—Jeff Baker

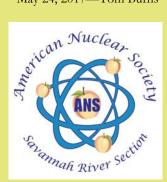
April 20, 2017—Scott Kirk



Stoller Newport News Nuclear A Subsidiary of Huntington Ingalls Industries



May 24, 2017-Tom Burns



May 31, 2017—Matt Blackwell





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2017 MEMBERSHIP FORM			
	<u>CIRCLE ONE</u> :	NEW RENEWAL	
MEMBER PLUS-\$250	NAME:		
SAME as BENEFACTOR and includes recog- nition in printed CNTA materials and at events.	EMPLOYER:		
BENEFACTOR-\$125.00	Home Address:		
BEST VALUEI Members receive one Teller Lecture banquet ticket w/reserved	CITY/STATE/ZIP CODE:		
seating and one ticket to the private Speaker's Reception; invitations to all events, quarterly newsletters and FREE	PHONE/CELL #:		
membership mixers.	EMAIL ADDRESSES: (YOU CAN HAVE NOTICES SENT TO HOME AND/OR WORK)		
Members receive invitations to all events, quarterly newsletters and FREE member's mixers.	HOME AND, OK WORKY	Email is our main means of communication! Be sure to include us on your change of address list if you make any changes to your contact information.	
SUSTAINING -\$35.00 Members receive invitations to all events, quarterly newsletters and FREE member's mixers.	REFERRED BY: (Name & email address if known)		
		UNITIES: We are seeking volunteers to serve on our committees. If	
STUDENT -\$15.00 Same as Sustaining. Students must be	COMMUNICATIONS:	elow which committee you are willing to volunteer for: EDUCATION:	
currently enrolled.	MEMBERSHIP:	TEACHER WORKSHOPS:	
Your support makes all the	GOLF COMMITTEE:		
difference! Help us increase public knowledge of all things nuclear and	SPEAKER'S BUREAU : _		
continue our education mission of nuclear technologies!	ENDOWMENT FUND: I would like additional information on how to gift to the CNTA Endowment Fund		
We are a Non-Profit 501 (c)3 c		D. #57-0953103; tax deductible based on IRS guidelines	
To Pay by Credit Card: Call the Cl	To Pay by Check: Mail t	o address listed below. # listed below. We accept Discover, MasterCard and Visa.	
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